What is claimed is:

1. A high-frequency circuit element comprising

a substrate,

a high-frequency circuit formed on said substrate,

a metal box electromagnetically shielding said high-frequency circuit by enclosing said substrate,

an input/output terminal placed on said metal box and inputting/outputting a high-frequency signal to/from said high-frequency circuit, and

at least one shielding element for interrupting an unwanted higher-order mode by suppressing the propagation of high frequency waves between the input-output terminals.

2. A high-frequency circuit element comprising

a substrate,

a high-frequency circuit formed on said substrate,

a metal box electromagnetically shielding said high-frequency circuit by enclosing said substrate,

an input/output terminal placed on said metal box and inputting/outputting a high-frequency signal to/from said high-frequency circuit, and

at least one plate for interrupting an unwanted higher-order mode substantially dividing an internal space in said metal box and cutting off the propagation path for the high-frequency waves in the internal space of said metal box.

3. The high-frequency circuit element according to claim 2, wherein said plate for interrupting an unwanted higher-order mode is made of a conductor.

4. The high-frequency circuit element according to claim 3, wherein said plate for interrupting an unwanted higher-order mode is electrically connected to said metal box.

5. The high-frequency circuit element according to claim 2, wherein said plate for interrupting an unwanted higher-order mode is made of a

dielectric having a high dielectric constant.

6. The high-frequency circuit element according to claim 2, wherein said plate for interrupting an unwanted higher-order mode is placed spanning over and approximately perpendicular to at least one input/output line of said high-frequency circuit and placed so that it is not in an electric contact with said input/output line.

7. The high-frequency circuit element according to claim 6, wherein said plate for interrupting an unwanted higher-order mode has a cut-out so that it is not in electric contact with the input/output line of said high-frequency circuit.

8. The high-frequency circuit element according to claim 2, wherein said high-frequency circuit is a high-frequency filter.

9. The high-frequency circuit element according to claim 8, wherein said high-frequency filter has a plurality of coupled planar circuit resonators.

10. The high-frequency circuit element according to claim 2, wherein said high-frequency circuit is a superconductive high-frequency filter.

11. A high-frequency circuit element comprising

a substrate,

a high-frequency circuit formed on said substrate,

a metal box electromagnetically shielding said high-frequency circuit by enclosing said substrate,

an input/output terminal placed on said metal box and inputting/outputting a high-frequency signal to/from said high-frequency circuit, and

at least one cover for interrupting an unwanted higher-order mode covering at least one input/output line of said high-frequency circuit in an internal space of said metal box, and suppressing the propagation of high-frequency waves.

12. The high-frequency circuit element according to claim 11, wherein said cover for interrupting an unwanted higher-order mode is made

of a conductor.

13. The high-frequency circuit element according to claim 12, wherein said cover for interrupting an unwanted higher-order mode is electrically connected to said metal box.

14. The high-frequency circuit element according to claim 11, wherein said cover for interrupting an unwanted higher-order mode is made of a dielectric having a high dielectric constant.

15. The high-frequency circuit element according to claim 11, wherein said high-frequency circuit is a high-frequency filter.

16. The high-frequency circuit element according to claim 15, wherein said high-frequency filter has a plurality of coupled planar circuit resonators.

17. The high-frequency circuit element according to claim 11, wherein said high-frequency circuit is a superconductive high-frequency filter.